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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LU, ZHIYU

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/768,072	Applicant(s) QUINN ET AL.	
	Examiner ZHIYU LU	Art Unit 2649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2012.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,3-5,8-13,15,19-22,24 and 25 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1,3-5,8-13,15,19-22,24 and 25 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 4) ☐ Other: ____.

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 3-5, 8-13, 15, 19-22 and 24-25 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8, 10-13, 15, 17 and 19-25 are rejected under 35 U.S.C. 103(a) as obvious over Moon et al. (US6804532) in view of Leatham et al. (US6370383).

To claim 1, Moon teach a wireless computing system, comprising:

- a first transceiver that supports wide area network wireless communications;
- a second transceiver that supports local area network wireless communications;
- a third transceiver that supports personal area network wireless communications;
- an antenna system that is operable to enable communications using any of the first transceiver, the second transceiver, and the third transceiver; and
- a selector coupled between the antenna system and each of the first transceiver, the second transceiver, and the third transceiver, wherein the selector is operable to:

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detect a communications transmission provided from a software application;
determine a transmission power being used to provide the communications transmission
(column 10 lines 20-49, power requirement decides routing metric, which decides which
network and transceiver to enable for communication, which leads to selector operation);
and connect one of the first transceiver, the second transceiver, and the third transceiver
to the antenna system based upon the transmission power in order to provide
communications for the software application (column 6 line 42 to column 7 line 14, the
mobile station capable of selecting and communicating with one or more communication
networks, wherein multiple transceivers may share a single antenna, which a
selector/switch coupled between antenna and transceivers obviously presents for
selecting capability).

Moon may not explicitly disclose decisive relationships among software application,
transmission power and transceiver selection, it would have been obvious to one of ordinary skill
in the art to recognize that software application drives selection of transmission power and
transceiver because different transmission protocols have different transmission power
requirement (e.g., Bluetooth driver handles Bluetooth transceiver, WiFi driver handles WLAN
transceiver, and cellular driver handles WWAN transceiver).

In further showing such obviousness, Leatham teach a wireless communication system
selecting a dynamic radio transceiver (obviously equivalent to selection of different transceivers)
based on mobile proximity threshold boundary, wherein transmission power is determined based
on reception power from a communication partner (column 2 line 21 to column 5 line 36)

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize and incorporate Leatham's teaching into the apparatus of Moon, in order to automate transmission power determination and transceiver selection.

To claim 15, Moon and Leatham teach a method for providing wireless communication as explained in response to claim 1 above.

To claim 22, Moon and Leatham teach a mobile computer as explained in response to claim 1 above.

To claims 3, 19 and 24, Moon and Leatham teach claims 1, 15 and 22.

Moon and Leatham teach wherein the selector is operable to: detect a communications reception to the software application; determine a reception power being used to provide the communications reception; and connect the one of the first transceiver, the second transceiver, and the third transceiver to the antenna system based upon the reception power in order to provide communications for the software application (column 2 line 57 to column 3 line 26).

To claims 4, 20 and 25, Moon and Leatham teach claims 1, 15 and 22.

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Moon teach wherein the first transceiver is operable at a first operating frequency and at least one of the second transceiver and the third transceiver is operable at a second frequency that is different from the first frequency (column 7 lines 1-7).

To claims 5 and 21, Moon and Leatham teach claims 1 and 15.

Moon teach wherein the first transceiver is operable at a first operating frequency, the second transceiver is operable at a second operating frequency that is different from the first operating frequency, and the third transceiver is operating at a third operating frequency that is different from each of the first operating frequency and the second operating frequency (column 7 lines 1-7).

To claim 8, Moon and Leatham teach claim 1.

Moon teach wherein the antenna system includes a single antenna that supports each of the first transceiver, the second transceiver, and the third transceiver (column 7 lines 13-14).

To claim 10, Moon and Leatham teach claim 1.

Moon teach wherein the selector is operable to connect the one of the first transceiver, the second transceiver, and the third transceiver to the antenna system to enable communications based upon instructions from an operating system stack (column 10 lines 20-49, selection is based on instruction to use routing metric to decide route periodically, which leads to transceiver selection).

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To claim 11, Moon and Leatham teach claim 1.

Moon teach wherein the selector is operable to connect the one of the first transceiver, the second transceiver, and the third transceiver to the antenna system to enable communications based upon a predetermined priority (column 10 lines 34-49, power consumption is taking into consideration of selection, obvious as predetermined priority based on battery power consumption, take official notice on this common power saving technique).

To claim 12, Moon and Leatham teach claim 11.

Moon teach wherein the predetermined priority is based on transceiver power consumption (as explained in response to claim 11 above).

To claim 13, Moon and Leatham teach claim 11.

Moon teach wherein the predetermined priority is based on communication costs (column 10 lines 34-49, communication quality and power requirement are all considered as communication costs).

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moon et al. (US6804532) in view of Leatham et al. (US6370383) and Gatherer et al. (US2002/0065058).

To claim 9, Moon and Leatham teach claim 1.

But, Moon and Leatham do not expressly disclose wherein the antenna system includes a plurality of antennas that support each of the first transceiver, the second transceiver, and the third transceiver.

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Gatherer teach an antenna array that is capable of connect with any RF front end section (Fig. 2, paragraphs 0023, 0026, 0044), which would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the apparatus of Moon and Leatham, for antenna design preference.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZHIYU LU whose telephone number is (571)272-2837. The examiner can normally be reached on Weekdays: 9AM-5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yuwen Pan can be reached on (571) 272-7855. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Zhiyu Lu
Primary Examiner
Art Unit 2649

/Zhiyu Lu/
Primary Examiner, Art Unit 2649
December 23, 2012